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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,483	09/02/2003	Dunling Li	TI-36843	2318

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EXAMINER

BRINEY III, WALTER F

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/652,483	<b>Applicant(s)</b> LI, DUNLING	
	<b>Examiner</b> Walter F. Briney III	<b>Art Unit</b> 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-9 and 11-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-9 and 11-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- 1**     **Claims 1, 3-9 and 11-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.**

**Claims 1, 3-9 and 11-20** contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In particular, both independent claims 1 and 9 recite “defin[ing] a threshold for zero amplitude change by determining, for a signal with a zero value amplitude at a zero crossing point, a tangent value of the signal, and by defining the zero value amplitude as a non-zero value depending upon the tangent of said signal at the zero crossing point.” The applicant’s specification does support defining a threshold in box 41 of figure 3, where the threshold is based on whether there is a zero amplitude change. See page 12, paragraph 29. However, the same section of the specification states that the threshold defined in box 41 is used “for comparison against a sum of durations between zero crossing points... to determine whether a frame contains tone data.” There is absolutely no suggestion that a threshold for zero amplitude change is defined in the manner claimed, nor is there any suggestion that a threshold for zero amplitude change even exists.

Independent claim 4 also recites "defining a threshold for zero amplitude change of a signal," however, as noted above no support for such a threshold can be found in the specification.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. **Claim 4 is rejected under 35 U.S.C. 102(e) as being anticipated by Hsieh (US Patent Application Publication 2004/0176062).**

**Claim 4** is limited to *a method for defining tone signals in a voice activity detection (VAD) device*. In rejecting this claim it is noted that Hsieh discloses a method for detecting a tone signal through digital signal processing. See Abstract. In operation, the tone detector of Hsieh performs a zero crossing rate (ZCR) measurement of an input signal in step (106) of figure 4. See paragraph 21. Following the ZCR measurement, a set of parameters from a plurality of zero crossing periods contained within a frame period are extracted in steps (108) and (110). See paragraphs 22 and 23. The parameters are used to calculate an average value and a variance in steps (114) and (116). See paragraphs 25 and 26. Finally in step (118) the variance is

compared to a threshold, the result determining the presence or absence of a tone.

See paragraph 27.

With respect to the claim language, when a zero crossing period is not detected in step (106), the method of figure 4 loops back to the initial filtering steps and attempts to discover a period in view of further samples. In this way, a range of the input signal is defined, where the range includes a zero crossing point. After a period has been determined in this way, its parameters are extracted in steps (108) and (110); an average and variance for a plurality of periods contained within a frame period are calculated in steps (114) and (116); and the variance is compared to a threshold in step (118). The threshold is inherently defined. Therefore, Hsieh anticipates all limitations of the claim.

### ***Response to Arguments***

Applicant's arguments filed 06 February 2006 with respect to claims 1, 3, 5-9 and 11-20 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to claim 4 have been fully considered but they are not persuasive.

**With respect to claim 4**, the applicant alleges on page 12, lines 9-19, of the current response that Hsieh neither teaches nor suggests how to perform its method by calculating the ZCR when the signal fails to cross the zero line;" to which the examiner respectfully disagrees. The examiner can find no support for the applicant's interpretation of Hsieh. Paragraph 21 does not conclude in the absolute determination

of speech existing or not. Instead Hsieh's figure 4 clearly depicts that if a period is not determined in step 106, i.e. a zero crossing does not exist at a particular signal sample, a range is determined by rerunning 106. See paragraphs 21 and 24. The result is that a wider window of samples is viewed. Therefore, as all of the applicant's arguments have been shown to be either moot or unpersuasive, the rejection of claim 4 is maintained.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F. Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**SINH TRAN**  
**SUPERVISORY PATENT EXAMINER**

WFB